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218

02/21/91

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892.       | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. <u>TWO</u> | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.           | 6. <input type="checkbox"/> _____   |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-12 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☐ Claims \_\_\_\_\_ are allowed.

4. ☒ Claims 1-12 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_ Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

Art Unit 218

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested" "Combined Printer and facsimile apparatus which scans using different scan rates and dot sizes".

1. The drawings are objected to because the fax crystal 42 should be labeled 43 in figure 1. Also the video memory buffer 22 is incorrectly labeled 2 in figure 1. Correction is required.
2. The disclosure is objected to because of the following informalities: At page 10, second paragraph lines 6-8, of the specifications the video memory buffer is incorrectly referred to as 23 of figure 1. Appropriate correction is required.
3. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an adequate written description of the invention.

As to page 10, lines 6-8 of the second paragraph, of the specifications the video memory buffer is cited as modulating the

Art Unit 218

light beam. It would appear from the specifications and drawings that the video memory buffer sends a signal to the video driver 23, and that ~~That~~ the video driver modulates the light beam, since it is cited as controlling spot size with pulse width modulation.

4. Claims 2-8 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 2 incorrectly recites a "means responsive" on line 3 without the required corresponding function.

See 35 USC 112 sixth paragraph.

6. Claims 2 and 8 are vague and indefinite for reasons given below:

As to claim 2, lines 4-5 "decompressed...light beam" are indefinite because it is not clear what is changing the speed of scanning.

As to claim 8, the phrase "means pulse width modulation means" is vague and indefinite.

7. Claims 4, 5 and 8 lack antecedent basis as follows:

Claim 4 line 4, the phrase "said mirror".

Claim 5 lines 14-15, the phrase "said spot size changing means".

Claim 8 lines 2-3, the phrase "said means for changing".

Art Unit 218

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

9. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 11 is rejected under 35 U.S.C. § 102(b) as being anticipated by Tsuda.

Tsuda discloses the claimed features of a method for producing copies of images in a laser printer (Fig. 3) having a source of first signals (signals with line density in millimeters) and second signals (signals with line density in inches), memory means (4 in Fig. 1) for storing bit-mapped images, a photoconductive surface (20), a source of laser light beam (laser output control unit 14), means for modulating laser light beam (12), means for scanning (15 and 16), and means for controlling scanning (22 and 23) at a first scan rate (according to clock 17a) and a second scan rate (according to clock 17b) differing from each other in frequency (note column 2 line 61-column 3 line 14).

11. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

12. Claims 1-8, 11, and 12 are rejected under 35 U.S.C. § 103 as being unpatentable over Izawa in view of Yoshimura.

13. As to claims 1-12, Izawa discloses a laser printing apparatus (3) having a first port for receiving image signals from a personal computer (5), a second port for receiving fax signals from a fax machine (1), memory means (34 and 37 of Fig. 4 of) for storing a bit map of an image, a means for decompression and demodulation (22 of figure 3) of fax signals, and a control means (25) for matching the densities of the fax signal and the printer (column 3 line 64 to column 4 line 10).

14. Izawa does not disclose the limitations noted in claims 1-3 and 11 of a photoconductive surface, a source of laser light beam, means for modulating a laser, or means for scanning laser light beam at two different speeds.

In addition, Izawa also does not disclose the limitation noted in claim 4 of a controller controlling a motor to rotate a polygonal mirror.

Further, Izawa does not disclose the limitation noted in

claims 5-8 and 12 of controlling the spot size by using pulse width modulation.

15. However, Yoshimura discloses a photoconductive surface (42), a source of laser light beam (24), means for modulating a laser (figure 7), and means for scanning the laser (figure 7), and means for scanning the laser at two different speeds (Figure 9) according to the type of image signal input (Note column 1 lines 9-17) with respect to claims 1-3 and 11.

In addition, Yoshimura also discloses scanning means (figure 9) having a polygonal mirror (30), a motor (column 2 line 63) for rotating the mirror, and means for controlling the RPM of the motor (172, 170) (note column 2 lines 58-67) with respect to claim 4.

Further with respect to claims 5-8 and 12, Yoshimura discloses changing the period of time while printing a dot to shift the beam spot of the laser and consequently change the width of a dot (note column 6 lines 19-37). This process is equivalent to pulse width modulation which changes the dot size. Yoshimura changes the dot size to compensate for changes in scanning rate in response to a first and second inputted image signal.

16. It would have been obvious to one of ordinary skill in the art at the time the invention has made to modify the laser printer apparatus

Q 2-17-91

→ the invention has made to modify the laser printer apparatus

of Izawa to include the laser printer hardware, scan rate changing means, and spot size changing means of Yoshimura since both inventors deal with providing a means to match differing scanning densities of an input apparatus (Fax, copier, PC) with the requirements of a laser printer. The motivation for including the scan rate and dot size changing means of Yoshimura being to allow for maximum image quality of two images of different densities using the same printer and scanner. This reduces the cost of having multiple printers (note Yoshimura, column 1 lines 53-60 and column 7 lines 19-29). Further, the motivation for including the mirror motor RPM controlling means of Yoshimura in the laser printer apparatus of Izawa being to provide an improved means of allowing two input apparatus to send image signals of differing densities to the same laser printer which can then output images at two different scan rates. This provides an improvement in image quality, while only using one motor and scanner to do so.

17. Claims 9 and 10 are rejected under 35 U.S.C. § 103 as being unpatentable over Izawa in view of Paradise.

18. Claims 9 and 10 differ from Izawa by the recitation of a memory means for storing a page of a bit map of an image signal in one portion of a memory while reading out a page of another image.

Art Unit 218

19. However, Paradise discloses using a two page memory (14 in figure 7) in a multi-function (fax, copying, printing) printer.

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the laser printer apparatus of Izawa to include page memory means of Paradise. The motivation being that using two pages in a memory allows for simultaneous input/output of image signals or bit maps which provides a highly improved image data transfer rate (note column 4 lines 38-51).

21. The word "anallg" on page 3 second paragraph line 10 should be -- analog --.

22. The word "a" on page 4 second line of SUMMARY OF THE INVENTION should be -- an --.

23. As to claim 7, it should end with a period.

24. In order correct indefiniteness, it is recommended that claim 2 line 4 read -- decompressed fax signals for changing the speed of --.

25. Fogaroli discloses that in order to change pixel density in an image two things must change: scan rate and dot size.

Fukae discloses that it is well known to decompress fax signals in a multi-function printer.

Kanda discloses that it is well known to demodulate an incoming analogue signal in order to convert to digital for use with a digital fax machine.

Serial No. 459,058

-9-

Art Unit 218

Ogura discloses digital copier with different methods of printing half tone depending upon the input; copy or fax.


Igi discloses a fax-printer combination with two different printing pitches.

Yajima discloses a laser printer which accepts information from a fax machine and a word processor.

26. Any inquiry concerning this communication should be directed to Eric Frahm at telephone number (703) 308-1265.



Frahm/ds  
February 08, 1991

  
**BENJAMIN R. FULLER**  
**SUPERVISORY PATENT EXAMINER**  
**ART UNIT 218**